

Amendments to the Claims:

This following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (current amended): A method for detecting a forwarding problem within an autonomous system, the autonomous system having a plurality of nodes including a source node, an intermediate node, and a destination node, the method comprising:

initiating a message from the source node, the message being arranged to be sent to a message destination that is an external address that is not an address located within the autonomous system;

identifying a path, the path being arranged to pass from the source node to the external address via the intermediate node and the destination node;

determining a number of nodes through which the path segment passes between the source node and the destination node; and

storing an indication in the message, the indication being arranged to indicate a number of nodes through which the path segment passes between the source node and the destination node;

forwarding the message from the source node along ~~a the path, the path being arranged to pass from the source node to the external address via the intermediate node and the destination node~~ wherein forwarding the message from the source node along the path includes receiving the message on a first node of the plurality of nodes, the first node being arranged to substantially alter the indication to indicate a number of nodes through which the path segment passes between the first node and the destination node;

receiving the message on the destination node, wherein a portion of the path between the source node and the destination node is a first path segment;

removing the message from the path at the destination node; and

initiating a response from the destination node, the response being arranged to be sent along the first path segment from the destination node to the source node, wherein the response is arranged to indicate that the intermediate node does not have a forwarding problem.

Claim 2 (original): The method of claim 1 wherein the external address is substantially specified in the message as the message destination.

Claim 3 (original): The method of claim 1 wherein the source node is a first edge node of the autonomous system and the destination node is a second edge node of the autonomous system.

Claims 4 - 5 (canceled)

Claim 6 (currently amended): The method of claim ~~5~~ 1 wherein when the message is received on the destination node, the destination node obtains the indication to determine whether to remove the message from the path.

Claim 7 (original): The method of claim 1 wherein the path is a best path between the source node and the external address.

Claims 8 -31 (canceled)